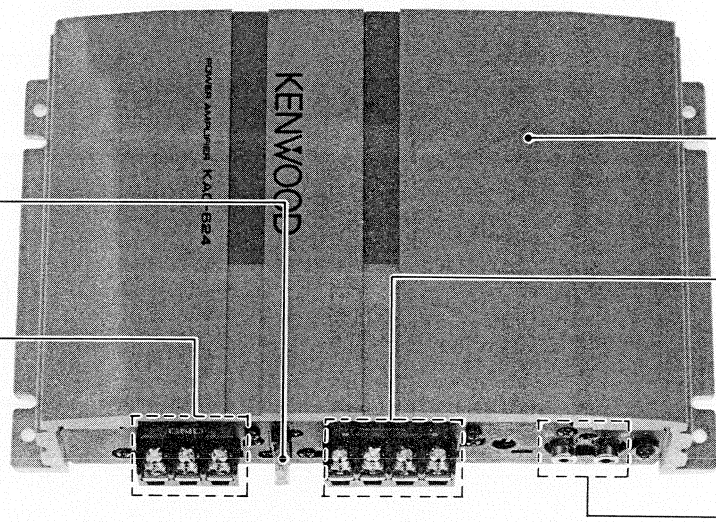
POWER AMPLIFIER

KAC-624

SERVICE MANUAL

KENWOOD

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B51-6564-00(MC) 3866



Heat sink
(F01-1421-02)

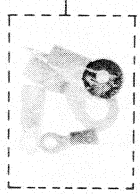
Fuse (20A)
(F05-2038-05)

Screw terminal board (4P)
(E70-0808-05)

Screw terminal
board (3P)
(E70-0807-05)

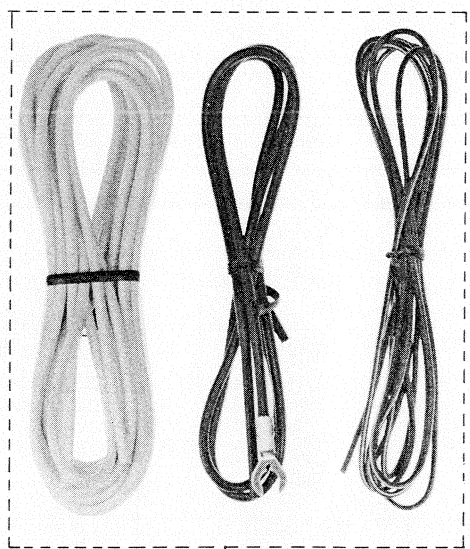
Phono jack (2P)
(E13-2205-05)

Accessory
(W01-0701-05)
* E Type only

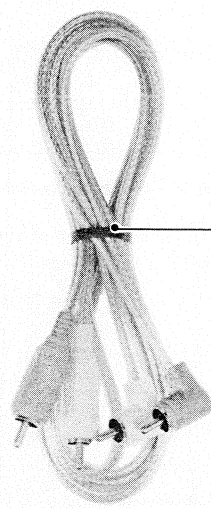




Screw set
(N99-1587-05)



DC cord
(E30-4064-05)
* E Type only



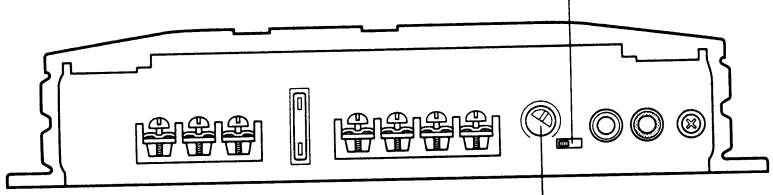
Audio cord
(E30-4066-05)
* E Type only

CONTROLS

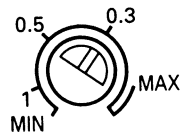
● OPERATION switch
This switch allows to select the amplification method of input signals.



- **STEREO position:**
  The input left and right signals are amplified separately. Use this position when the unit is used as a stereo amplifier.
- **MONO position:**
  The input left signal is amplified twice the normal boost level. Use this position when the unit is used as a high-power monaural amplifier.
  (The input right signal is not output.)



● Input sensitivity control
Adjust this control according to the pre-out level of the center unit connected to this unit.

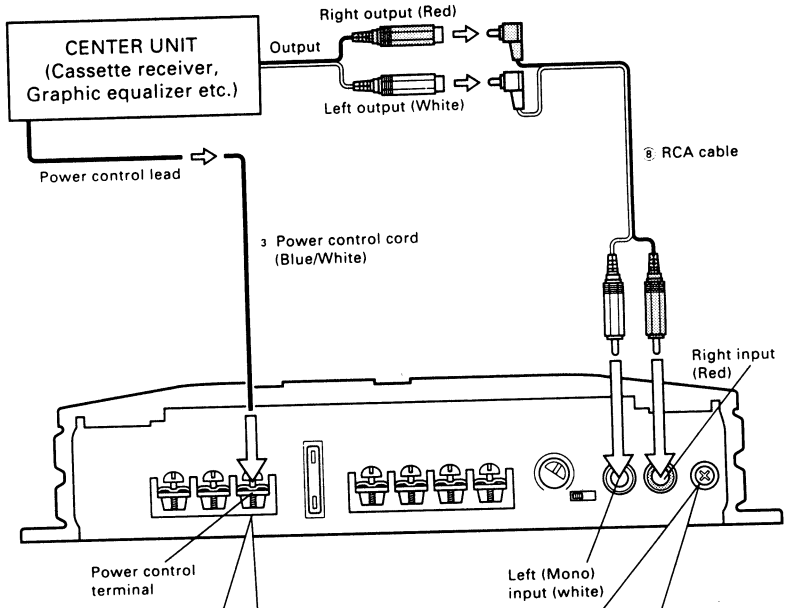


Center unit pre-out level	Amplifier input sensitivity
300 mV	MAX
800~1000 mV	0.3 V

NOTE
Refer to "SPECIFICATIONS" on the center unit's instruction manual about the pre-out level.

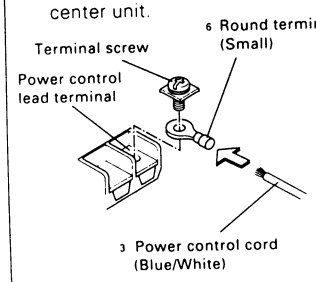
CONNECTIONS

■ System connection



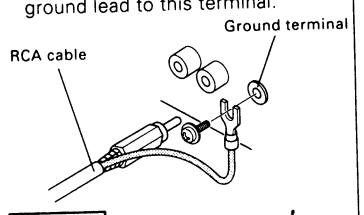
Power control lead terminal

- Connect this terminal to the Power control cord ③ from the center unit.



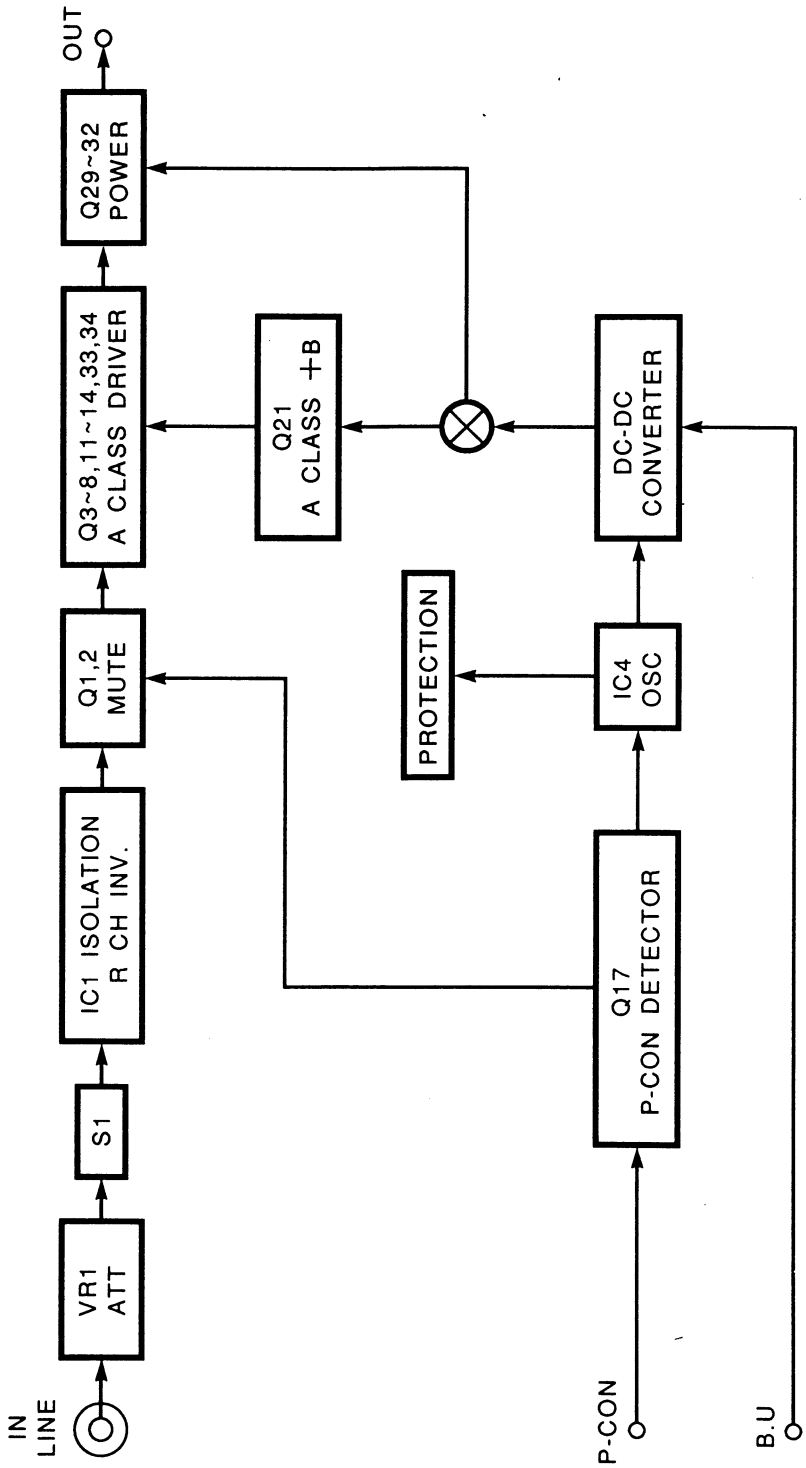
RCA cable ground lead terminal

- When using an RCA cable with a ground lead attached, connect the ground lead to this terminal.



NOTE
Do not use this terminal for power source grounding. This unit will not operate if the power source ground wire is connected to this terminal.

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

AUDIO UNIT (X09-5000-10)

Component	Use/Function	Operation/Condition
Q1, 2	Mute	Mute operation at P-CON. ON/OFF.
Q3~6	Input differential amplifer	
Q7, 8	2nd-stage differential amplifier	
Q9, 10	Temperatre compensation	
Q11~14	Power drive stage	
Q15, 16	Over current detector	ON when overcurrent flows at Q11~Q14.
Q17	P-con. detector	
Q18	Power switch	When Q17 turns ON, Q18 also turns ON to supply power to IC4.
Q19	Power switch	When Q17 turns ON, Q19 turns OFF so that Q12 turns ON.
Q20	Mute driver	ON for P-CON. ON/OFF.
Q21	A-class +B control	A-class section positive power ON/OFF switch.
Q23, 24	DC-DC driver	
Q25, 26	DC-DC power	
Q29~Q32	Amplifier power stage	
Q33, 34	2nd-stage differential amplifier	
Q35	A-class Mute	Mute operation at A-class section ON/OFF.
IC1	Isolation inversion amplifier input buffer	Isolation amplifier. R-ch inversion.
IC4	OSC	Fix the oscillation frequency of DC-DC converter, detect the protection of overcurrent and termperature.

ADJUSTMENT/ABGLEICH

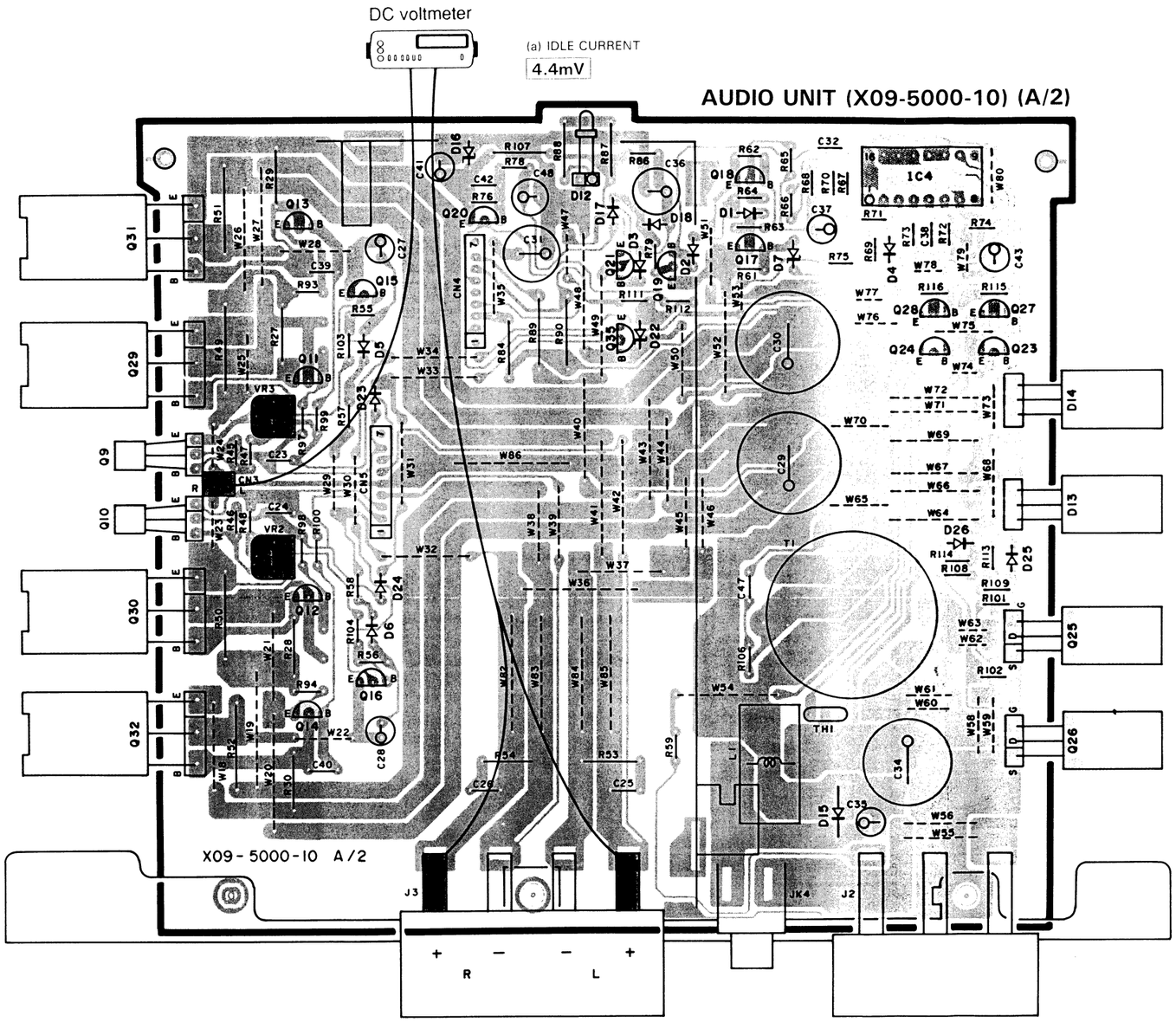
ADJUSTMENT

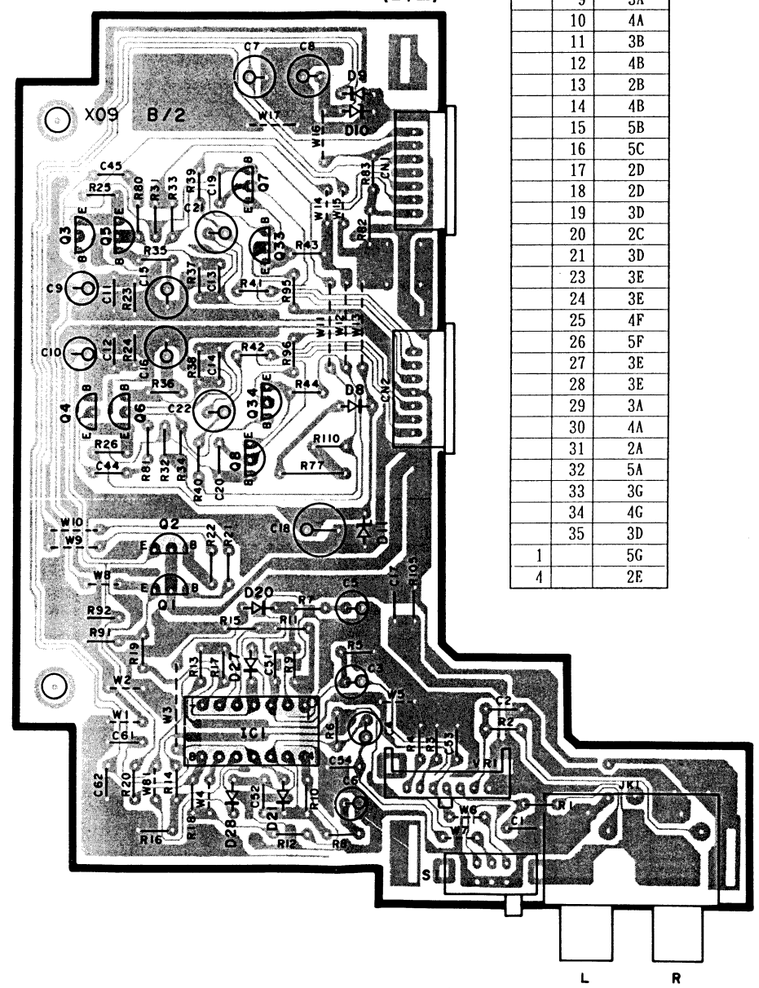
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
Connect a cassette deke							
1	IDLE CURRENT	–	Connect a DC voltmeter between CN3 (L,R) and SP-OUT (L,R)	VOLUME:0	VR2 (L) VR3 (R)	4.4mV	(a)

ABGLEICH

No.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	VERSTARKER EINSTELLUNG	ABGLETCH-PUNKTE	ABGLEICHEN FUR	ABB.
Ein Kassettendeck anschließen							
1	LEERLAUFSTROM	–	Ein gleichstromvoltmeter zwischen CN3 (L,R) und SP-OUT (L,R) anschließen.	VOLUME : 0	VR2 (L) VR3 (R)	4.4mV	(a)

PC BOARD (Component side view)





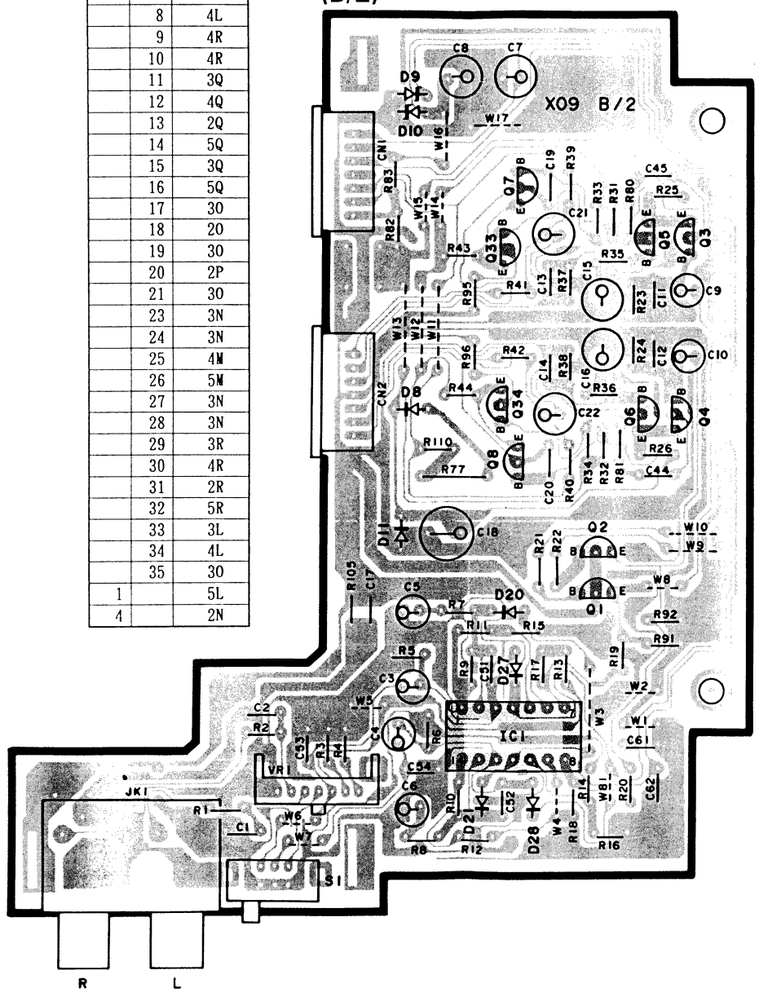
Ref. No. IC	Ref. No. Q	Address
	1	5G
	2	4G
	3	3G
	4	4G
	5	3G
	6	4G
	7	3G
	8	4G
	9	3A
	10	4A
	11	3B
	12	4B
	13	2B
	14	4B
	15	5B
	16	5C
	17	2D
	18	2D
	19	3D
	20	2C
	21	3D
	23	3E
	24	3E
	25	4F
	26	5F
	27	3E
	28	3E
	29	3A
	30	4A
	31	2A
	32	5A
	33	3G
	34	4G
	35	3D
1		5G
4		2E

Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Foil side view)

Ref. No.		
IC	Q	Address
	1	5L
	2	5L
	3	3M
	4	4M
	5	3L
	6	4L
	7	3L
	8	4L
	9	4R
	10	4R
	11	3Q
	12	4Q
	13	2Q
	14	5Q
	15	3Q
	16	5Q
	17	3O
	18	2O
	19	3O
	20	2P
	21	3O
	23	3N
	24	3N
	25	4M
	26	5M
	27	3N
	28	3N
	29	3R
	30	4R
	31	2R
	32	5R
	33	3L
	34	4L
	35	3O
1		5L
4		2N

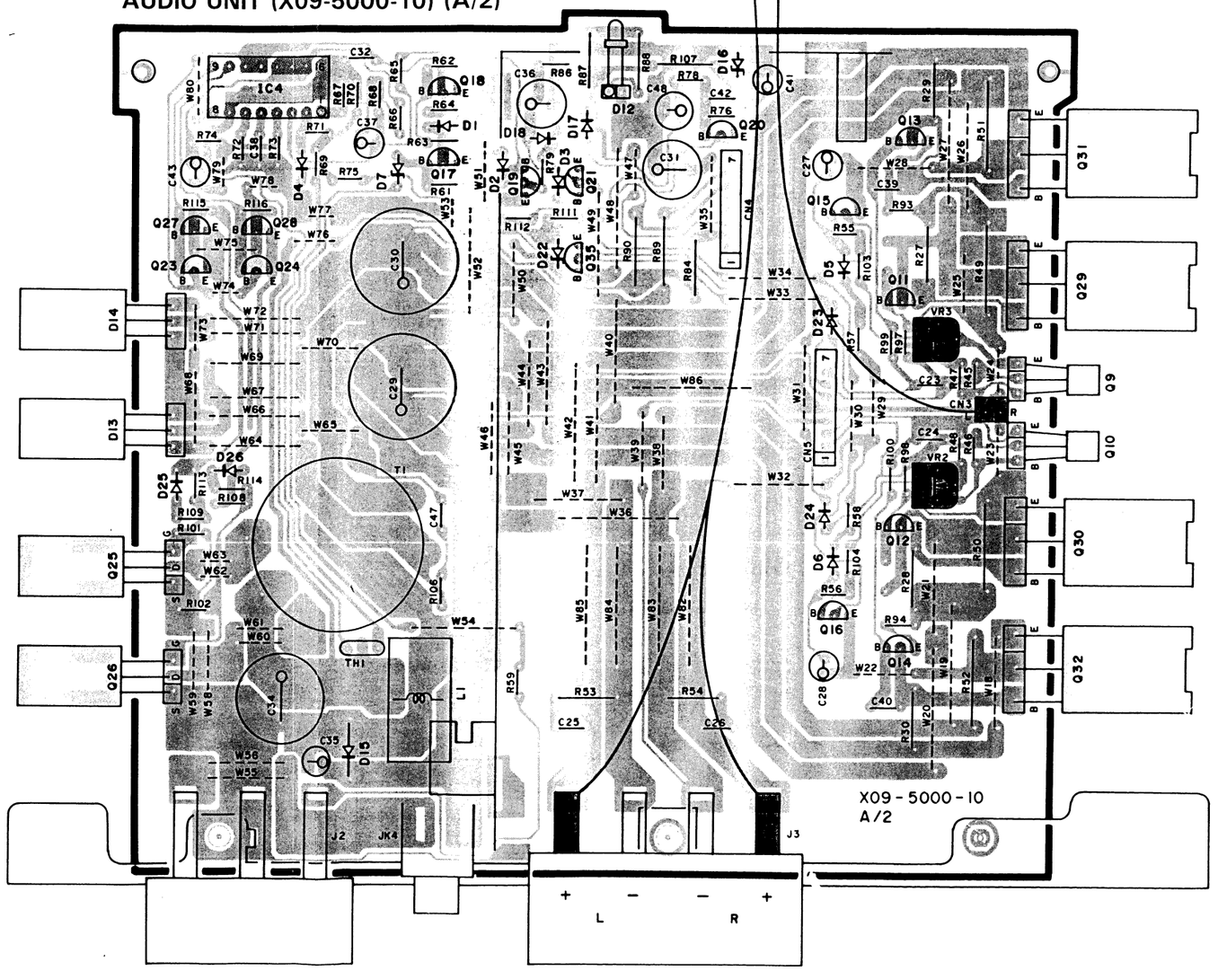
(B/2)



AUDIO UNIT (X09-5000-10) (A/2)

DC voltmeter

(a) IDLE CURRENT
4.4mV



Refer to the schematic diagram for the values of resistors and capacitors.

(X09-5000-10)(B/2)

(X09-)(A/2)

IC1 ISOLATION, INVERSION AMPLIFIER, INPUT BUFFER

LINE IN

MUTE DRIVER

A-CLASS +B CONTROL

REFERENCE REGULATOR

ERROR AMP

OSCILLATOR

P-CON. DETECTOR

POWER SWITCH

OSC

Q1,2 MUTE

INPUT DIFFERENTIAL AMPLIFIER

2nd-STAGE DIFFERENTIAL AMPLIFIER

Q9,10 TEMPERATRE COMPENSATION

Q11~14 POWER DRIVE STAGE

Q15,16 OVER CURRENT DETECTOR

Q29~32 AMPLIFIER POWER STAGE

Q23,24 DC/DC DRIVER

Q25,26 DC/DC POWER

SPEAKER OUT

POWER IN

CN1 CN4 CN2 CN5 CN3

JK1 JK2 JK3 JK4

IC1	: μPC4574C
IC4	: μPC494C
Q1,2,7~10,15~17,19,23,24,33~35	: 2SC945(A)(Q,P)
Q3~6,18,20,27,28	: 2SA733(A)(Q,P)
Q11,12	: 2SC1627A
Q13,14	: 2SA817A
Q21	: 2SC3940A(R,S)
Q25,26	: IRFIZ34LF24
Q29~32	: 2SD2065BZ(S,P)
D1~6,8,17,18,20,21,23~28	: 1SS176
D7,D22	: RD5.1JS(B2)
D9~11,16	: RD10JS(B)
D12(LED)	: B30-1342-05
D13	: FMU12S*B
D14	: FMU12R*B
D15	: RM10Z

SIGNAL LINE
GND LINE
+B LINE
−B LINE

DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.

Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u.U. geringfügig.

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

Y08-4730-10

KAC-624 (K)

2SA733 (A)
2SA817A
2SC1627A
2SC3940A
2SC945 (A)

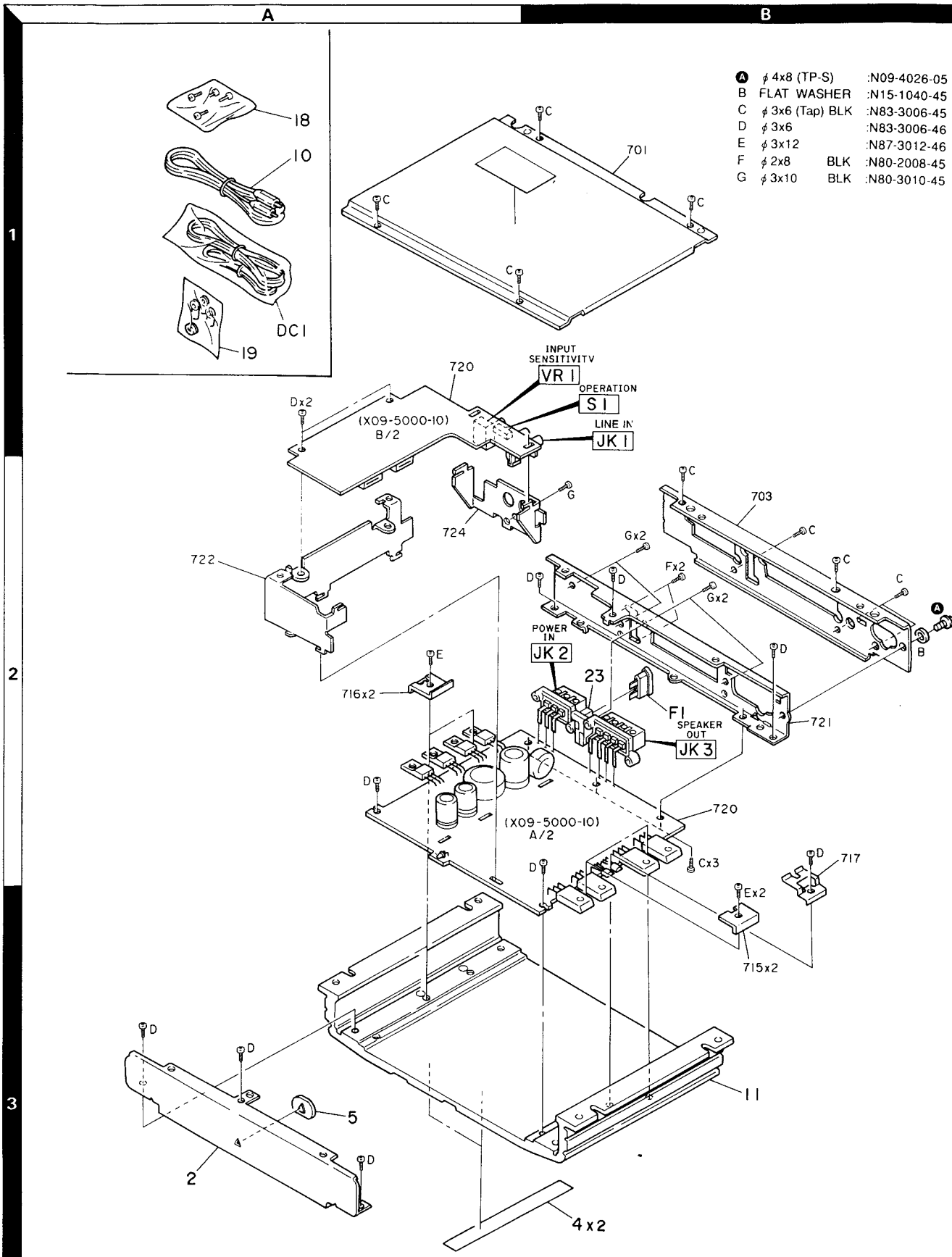
UPC4574C

UPC494C

KAC-624

KENWOOD

EXPLODED VIEW



A	φ 4x8 (TP-S)		:N09-4026-05
B	FLAT WASHER		:N15-1040-45
C	φ 3x6 (Tap)	BLK	:N83-3006-45
D	φ 3x6		:N83-3006-46
E	φ 3x12		:N87-3012-46
F	φ 2x8	BLK	:N80-2008-45
G	φ 3x10	BLK	:N80-3010-45

Parts with the exploded numbers larger than 700 are not supplied.

KAC-624

PARTS LIST

* New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
KAC-624						
2	3A	*	A64-0046-03	PANEL		
4	3A,3B	*	B03-3009-04	DRESSING PLATE		
5	3A		B19-0850-04	LIGHTING BOARD		
-			B46-0100-20	WARRANTY CARD		
-		*	B64-0284-00	INST. MANUAL(ENG,FRA)	K	
-		*	B64-0285-00	INST. MANUAL(E.F.G.N.I.)	E	
10	1A	*	E30-4066-05	AUDIO CORD	E	
⚠ DC1	1A	*	E30-4064-05	DC CORD (CRITICAL P.)	E	
11	3A,3B	*	F01-1421-02	HEAT SINK		
F1	2B		F05-2038-05	FUSE (20A)		
-		*	H10-4440-03	POLYSTYRENE FOAMED FIXTURE		
-			H25-0336-04	PROTECTION BAG (170X250X0.03)		
-			H25-0338-04	PROTECTION BAG (250X350X0.03)		
-		*	H54-0072-04	ITEM CARTON CASE		
-		*	H64-0079-04	OUTER CARTON CASE		
18	1A		N99-1587-05	SCREW SET		
A	2B		N09-4026-05	TAPPING SCREW (4X8,TP,S)		
B	2B		N15-1040-45	FLAT WASHER (4)		
C	1B,2B		N83-3006-45	PAN HEAD TAPTITE SCREW		
D	3A		N83-3006-46	PAN HEAD TAPTITE SCREW		
E	3B		N87-3012-46	BRAZIER HEAD TAPTITE SCREW		
19	1A		W01-0701-05	ACCESSORY	E	
AUDIO UNIT (X09-5000-10)						
D12			B30-1342-05	LED		
C1 ,2			CK45FB1H102K	CERAMIC 1000PF K		
C3 ,4			CE04DW1C100M	ELECTRO 10UF 16WV		
C5 -8			CE04DW1C220M	ELECTRO 22UF 16WV		
C9 ,10			CE04DW1H100M	ELECTRO 10UF 50WV		
C11 ,12			CK45FB1H681K	CERAMIC 680PF K		
C13 ,14			CC45FSL1H270J	CERAMIC 27PF J		
C15 ,16			CE04DW0J221M	ELECTRO 220UF 6.3WV		
C17			CK45FB1H102K	CERAMIC 1000PF K		
C18			CE04DW1C221M	ELECTRO 220UF 16WV		
C19 ,20			CC45FSL1H270J	CERAMIC 27PF J		
C21 ,22			CE04DW1V220M	ELECTRO 22UF 35WV		
C23 ,24			CK45FB1H102K	CERAMIC 1000PF K		
C25 ,26			CF92FV1H473J	MF 0.047UF J		
C27 ,28			CE04DW1H4R7M	ELECTRO 4.7UF 50WV		
C29 ,30		*	C90-2780-05	ELECTRO 2200UF 35WV		
C31			CE04DW1V471M	ELECTRO 470UF 35WV		
C32			CF92FV1H104J	MF 0.10UF J		
C34		*	C90-2689-05	ELECTRO 3300UF 16WV		
C35			CE04DW1C100M	ELECTRO 10UF 16WV		
C36			CE04DW1V101M	ELECTRO 100UF 35WV		
C37			CE04DW1A330M	ELECTRO 33UF 10WV		
C38			CF92FV1H102J	MF 1000PF J		
C39 ,40			CK45FB1H331K	CERAMIC 330PF K		
C41			CE04DW1C330M	ELECTRO 33UF 16WV		
C42			CK45FB1H472K	CERAMIC 4700PF K		

E : Europe **W** : Without Europe
P : Canada **K** : U.S.A. and Canada
X : Australia
M : Without Europe, U.S.A. and Canada

⚠ indicates safety critical components.

PARTS LIST

× New Parts
Parts without Parts No. are not supplied.
Les articles non mentionnes dans le Parts No. ne sont pas fournis.
Teile ohne Parts No. werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C43			CE04DW1C100M	ELECTRO 10UF 16WV		
C44 ,45			CF92FV1H103J	MF 0.010UF J		
C47			CK45FB1H102K	CERAMIC 1000PF K		
C48			CE04DW1V470M	ELECTRO 47UF 35WV		
C51 ,52			CC45FSL1H221J	CERAMIC 220PF J		
C53 ,54			CC45FSL1H271J	CERAMIC 270PF J		
C61 ,62			CK45FB1H102K	CERAMIC 1000PF K		
CN1 ,2			E40-9130-05	FLAT CABLE CONNCTOR		
CN3			E40-3640-05	PIN ASSY		
JK1	1A		E13-2205-05	PHONO JACK (2P)		
⚠ JK2	2B	*	E70-0807-05	SCREW TERMINAL BOARD(CRITICAL)		
JK3	2B	*	E70-0808-05	SCREW TERMINAL BOARD		
W19 ,20			E31-5000-05	JUMPER WIRE		
W26 ,27			E31-5000-05	JUMPER WIRE		
W36			E31-5000-05	JUMPER WIRE		
W40 -43			E31-5000-05	JUMPER WIRE		
W48 ,49			E31-5000-05	JUMPER WIRE		
W52			E31-5000-05	JUMPER WIRE		
W54			E31-5000-05	JUMPER WIRE		
W82 -86			E31-5000-05	JUMPER WIRE		
⚠ 23	2B	*	J13-0602-05	FUSE HOLDER (CRITICAL P.)		
L1			L33-0932-05	LINE FILTER COIL		
T1		*	L19-0531-05	TRANSFORMER FOR CONVERTER		
C	2B		N83-3006-45	PAN HEAD TAPTITE SCREW		
D	2A,2B		N83-3006-46	PAN HEAD TAPTITE SCREW		
F	2B		N80-2008-45	PAN HEAD TAPTITE SCREW		
G	2B		N80-3010-45	PAN HEAD TAPTITE SCREW		
R49 -52		*	R92-2115-05	METAL FILMR 1 J 2W		
R77			RD14DB2H561J	SMALL-RD 560 J 1/2W		
R89 ,90			RS14KB3A681J	FL-PROOF RS 680 J 1W		
VR1	1A		R10-3631-05	POTENTIOMETER(20K)		
VR2 ,3	2B	*	R12-0607-05	TRIMMING POT.(470)		
S1	2A		S62-0802-05	SLIDE SWITCH		
D1 -6			1SS176	DIODE		
D7			RD 5.1JS(B2)	ZENER DIODE		
D8			1SS176	DIODE		
D9 -11			RD10JS(B)	ZENER DIODE		
D13		*	FMU12S*B	DIODE		
D14		*	FMU12R*B	DIODE		
D15			RM10Z	DIODE		
D16			RD10JS(B)	ZENER DIODE		
D17 ,18			1SS176	DIODE		
D20 ,21			1SS176	DIODE		
D22			RD5.1JS(B2)	ZENER DIODE		
D23 -28			1SS176	DIODE		
IC1		*	UPC4574C	IC(OP AMP X4)		
IC4			UPC494C	IC(SWITCHING REGULATOR)		
Q1 ,2			2SC945(A)(Q,P)	TRANSISTOR		
Q3 -6			2SA733(A)(Q,P)	TRANSISTOR		
Q7 ,8			2SC945(A)(Q,P)	TRANSISTOR		
Q9 ,10			2SC945(A)(Q,P)	TRANSISTOR		
Q11 ,12		*	2SC1627A	TRANSISTOR		

E : Europe **W** : Without Europe
P : Canada **K** : U.S.A. and Canada
X : Australia
M : Without Europe, U.S.A. and Canada

⚠ indicates safety critical components.

PARTS LIST

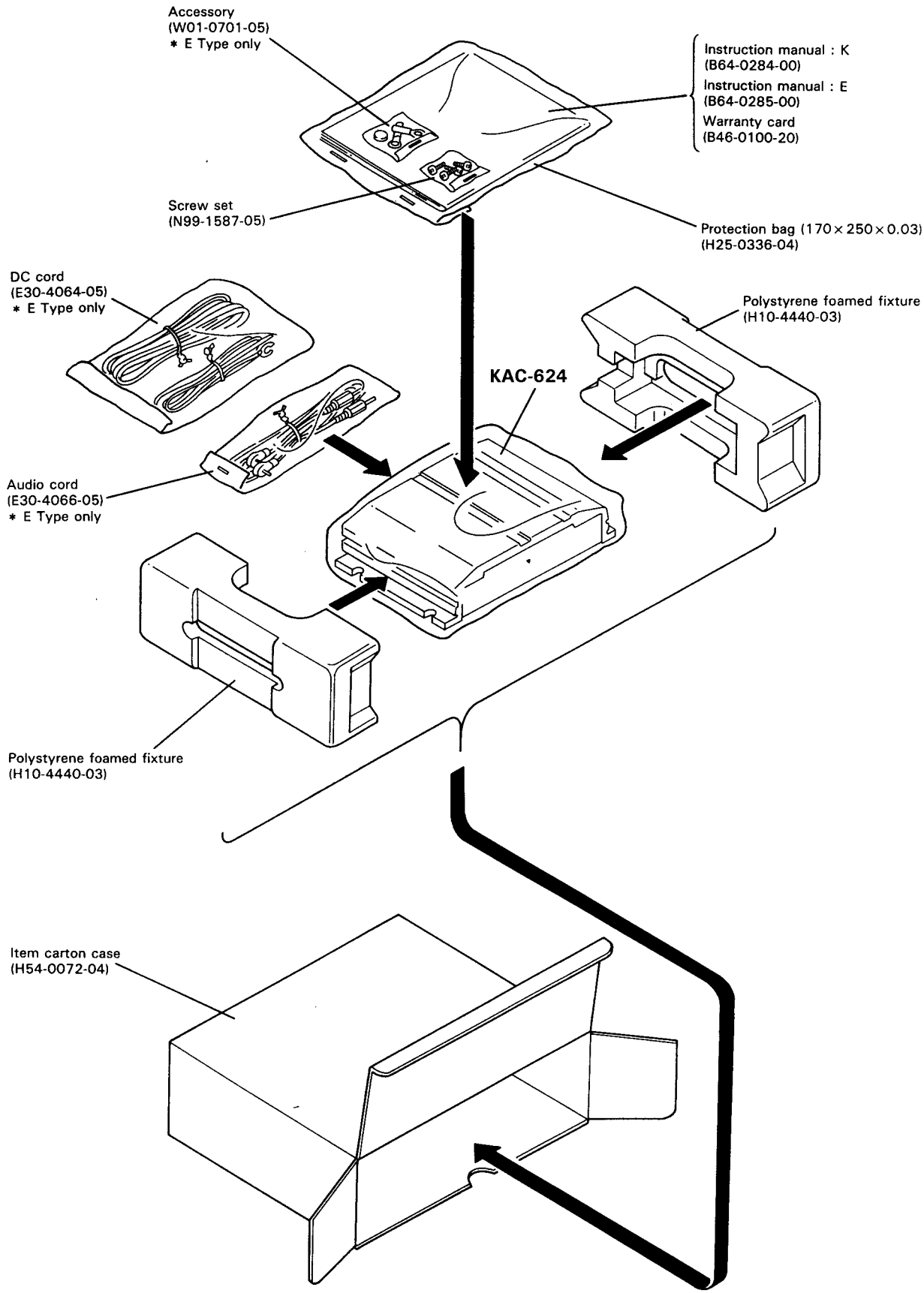
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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
Q13 ,14		*	2SA817A -	TRANSISTOR		
Q15 -17			2SC945(A)(Q,P)	TRANSISTOR		
Q18			2SA733(A)(Q,P)	TRANSISTOR		
Q19			2SC945(A)(Q,P)	TRANSISTOR		
Q20			2SA733(A)(Q,P)	TRANSISTOR		
Q21			2SC3940A(R,S)	TRANSISTOR		
Q23 ,24			2SC945(A)(Q,P)	TRANSISTOR		
Q25 ,26		*	IRFIZ34LF24	FET		
Q27 ,28			2SA733(A)(Q,P)	TRANSISTOR		
Q29 -32		*	2SD2065BZ(S,P)	TRANSISTOR		
Q33 -35			2SC945(A)(Q,P)	TRANSISTOR		
TH1		*	PTH59F04BC222TS	POSITIVE RESISTOR		

E : Europe **W** : Without Europe
P : Canada **K** : U.S.A. and Canada
X : Australia
M : Without Europe, U.S.A. and Canada

⚠ indicates safety critical components.

PACKING


Accessory
(W01-0701-05)
* E Type only
Instruction manual : K
(B64-0284-00)
Instruction manual : E
(B64-0285-00)
Warranty card
(B46-0100-20)
Screw set
(N99-1587-05)
Protection bag (170×250×0.03)
(H25-0336-04)
DC cord
(E30-4064-05)
* E Type only
Polystyrene foamed fixture
(H10-4440-03)
KAC-624
Audio cord
(E30-4066-05)
* E Type only
Polystyrene foamed fixture
(H10-4440-03)
Item carton case
(H54-0072-04)

SPECIFICATIONS

Specifications subject to change without notice.

Audio Section

Max Power Output
- Normal ..... 80 W × 2
- Bridged ..... 180 W × 1

Rated Power Output (4 Ω)
- Normal (20 Hz ~ 20 kHz, less than 0.08% THD) ..... 40 W × 2
- Bridged (1 kHz, 0,8 %) ..... 110 W × 1

Rated Power Output (2 Ω)
- Normal (1 kHz, 0,8 % THD) ..... 55 W × 2

Frequency Response (–3 dB) ..... 4 Hz ~ 45 kHz
Signal to Noise Ratio ..... 100 dB
Sensitivity (MAX.) ..... 0.15 V (rated output)
(MIN.) ..... 3.0 V (rated output)
Input Impedance ..... 10 kΩ
Damping Factor (100 Hz) ..... More than 100

General

Operating Voltage ..... 14.4 V (11 ~ 16 V allowable)
Current Consumption (MAX.) ..... 15 A
Dimensions (W × H × D) ..... 220 × 48 × 150 mm
Weight ..... 1.6 kg

Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Kenwood poursuit une politique de progrès constants en ce qui doncerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

Kenwood strebt ständige, Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

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